CLAIMS:

1.   A method of enhancing an audio signal, the method comprising the steps of:
-        detecting tonal signal components in a frequency range of the audio signal,
-        producing enhancement signals, and
-        adjusting the level of the enhancement signals in dependence of any detected
5   tonal signal components in said frequency range.

2.   The method according to claim 1, wherein the enhancement signals are
harmonics or sub-harmonics of part of the audio signal.

10   3.   The method according to claim 1 or 2, wherein the frequency range comprises
bass frequencies.

4.   The method according to any of the preceding claims, wherein the step of
detecting tonal frequency components comprises the sub-steps of:
15   -   generating a sine signal and a cosine signal,
-        multiplying both the sine signal and the cosine signal by the audio signal,
-        filtering the respective multiplied signals, and
-        determining an average of the low pass filtered signals so as to produce a
detection signal.
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5.   The method according to claim 4, wherein the sine and cosine signals both
have a frequency which is substantially equal to a dominant frequency of the frequency
range.

25   6.   A device (1) for enhancing an audio signal, the device comprising:
-        detector means (3) for detecting tonal signal components in a frequency range
of the audio signal,
-        enhancement means (2) for producing enhancement signals, and

-        adjustment means (4) for adjusting the level of the enhancement signals in dependence of any detected tonal signal components in said frequency range.

7.   The device according to claim 6, wherein the enhancement signals are
harmonics or sub-harmonics of part of the audio signal.

8.   The device according to claim 6 or 7, wherein the frequency range comprises bass frequencies.

9.   The device according to claim 6, 7 or 8, wherein the detector means (3) comprise:

-        generator means (31, 32) for generating a sine signal and a cosine signal,

-        multiplication means (33, 34) for multiplying the audio signal by the sine signal and the cosine signal respectively,

-        filter means (35, 36) for filtering the multiplied sine signal and cosine signal respectively, and

-        averaging means (37) for determining an average of the filtered signals so as to produce a detector signal.

10.   The device according to claim 9, further comprising scaling means (38) for scaling the detector signal.

11.   The device according to claim 9 or 10, further comprising frequency tracking means (39) for tracking the frequency in the frequency range and controlling the generator means (31, 32).

12.   The device according to any of claims 6 to 11, further comprising a first filter (8) for filtering the audio input signal prior to enhancement, a second filter (9) for passing signals not passed by the first filter, and adding means (7) for adding the enhancement signals and the signals passed by the second filter (9).

13.   A tonal signal detector (3) comprising:

-        generator means (31, 32) for generating a sine signal and a cosine signal,

-        multiplication means (33, 34) for multiplying the audio signal by the sine

signal and the cosine signal respectively,

- filter means (35, 36) for filtering the multiplied sine signal and cosine signal respectively, and

- averaging means (37) for determining an average of the filtered signals so as to produce a detector signal.

14.   The detector according to claim 13, further comprising scaling means (38) for scaling the detector signal.

15.   The detector according to claim 13 or 14, further comprising frequency tracking means (39) for tracking the frequency in the frequency range and controlling the generator means (31, 32).

16.   An audio system, comprising a device (1) according to any of claims 6 to 12 or a detector (3) according to any of claims 13 to 15.